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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/714,225	11/17/2000	Yasuhiro Ichihara	837.1958/JDH	4184

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EXAMINER

WANG, GEORGE Y

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 07/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/714,225

Applicant(s)

ICHIHARA ET AL.

Examiner

George Y. Wang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 4,5,8-10 and 14 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-3 is/are allowed.
- 6) ☒ Claim(s) 6,7 and 11-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 November 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 6-7, 11-13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuhara et al. (U.S. Patent No. 5,787,215, from hereinafter "Kuhara") in view of Yoshida (U.S. Patent No. 5,963,696, from hereinafter "Yoshida").

3. Regarding claims 6-7, 11-12, and 15, Kuhara discloses a laser diode module having a laser diode assembly (fig. 6, ref. A) and a lens-filter assembly (fig. 6, ref. B).

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The laser diode assembly has a base (fig. 6, ref. 32), a carrier (fig. 6, ref. 31), a laser diode (fig. 6, ref. 29) mounted on carrier, a cap (fig. 6, ref. 34) fixed and surrounding laser diode, and a holder (fig. 6, ref. 36) around the cap. The lens-fiber assembly has a casing (fig. 6, ref. 38) with two ends respective holes or cavities and axes (fig. 6), such that the second casing hole has a smaller diameter than that of the first (fig. 6). Kuhara further teaches a ferrule (fig. 6, ref. 39) with imbedded optical fiber (fig. 6, ref. 40) with defined spacing between each end and having slant polished ends set in the range of about 4 to 8 degrees (col. 4, lines 21-23) with respect to a plane perpendicular to the axis of the ferrule, and is positioned axially farthest from the lens as well. The slanting end keeps reflected light from returning to the laser diode (col. 4, lines 23-25).

The reference, however, fails to specifically disclose that the second casing axis is positioned such that it is offset from the first casing axis. Furthermore, Kuhara does not specifically teach a sleeve portion that fixes the holder to the casing.

Yoshida discloses a laser diode module (fig. 13) having a second axis is positioned such that it is offset from the first axis (fig. 13; col. 15, lines 12-26) and a sleeve portion (fig. 13, ref. 14) that fixes the holder (fig. 13, ref. 14) to the casing (fig. 13, ref. 16).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to offset the first and second axes of the laser diode module and to include a sleeve portion since one would be motivated to maximize the power of light (col. 15, lines 12-26). According to Yoshida, alignment of the laser, lens, and fiber are carried out by the positioning of the holder in the x-y plane such that the most suitable

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position for optimum power is when the holder deviates from the center axis in the x direction (col. 15, lines 18-19). Because the holder is directly fixed and therefore dependent on the sleeve's positioning (col. 15, lines 19-21), it would have been obvious to combine the sleeve of Yoshida to the laser diode module of Kuhara so that the second axis would be offset from the first axis so that maximization of power would be achieved (col. 15, lines 12-26).

4. As to claim 13, Kuhara and Yoshida disclose the laser diode module as recited above. However, the references fail to specifically teach a third hole that allows communication between the first and second holes with the ambient air and a pin that closes the hole.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add a third hole with a pin since one would be motivated to cool the laser diode when necessary. One skilled in the art would recognize that upon constant excitation and emission of light, the first and second holes of the laser diode module would achieve significant amount of internal heating. Providing ventilation with the ambient air via a third hole would have been obvious to one of ordinary skill in the art at the time the invention was made for reducing the laser diode temperature, thereby expediting the reuse of the module.

Response to Arguments

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5. Applicant's arguments with respect to claims 6-7 and 11-13 have been fully considered but they are not persuasive.

6. In regards to claims 6 and 11, Applicant argues that casing of the Yoshida reference does not have separate axes and that the lens is not in the same body (casing) as the ferrule. Applicant's main argument here rests on the issue of the one body (casing) as recited in the claimed invention. Applicant provides no advantage to having a single casing other than for alignment purposes but ignores the details. The only alignment advantage the Examiner can find is not confined to the single casing but to the alignment grooves and rails added to amend claim 1. Other than that, Examiner notes that the Yoshida reference, in the aforementioned rejection, applies to any axis offset because device functions the same and serves the same purpose in either two or one casing. Therefore, the motivation in the Yoshida reference that any deviation from the center axis of the apparatus optimizes the power, as recited above, is directly applicable any device having a single casing or not. Furthermore, it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *However v. Detroit Stove Works*, 150 U.S. 164 (1893).

Applicant also argues that none of the prior art reference discloses a "second casing hole diameter that is smaller than that of the first." Examiner points to fig. 6 of Kuhara and notes that the reference does indeed disclose a second casing hole diameter that is smaller than that of the first. Kuhara's second hole, which may be

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difficult to identify in the figure because of lack of labeling, depicts a tapered decrease in diameter, which fully reads on Applicant's decrease in the second casing hole diameter.

Therefore, Examiner asserts the validity of the prior art references and maintains rejection.

7. As to claim 13, in response to applicant's argument against the cooling motivation of the laser diode via the third hole, the fact that applicant has recognized another advantage cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). Furthermore, Applicant argument that it is "impractical and appears to missing the point of the third hole" because "hundreds of these modules are located throughout a communications system" is invalid because nowhere does Applicant claim more than one diode or module. Therefore, such an assertion of impracticality based on intended application and not on the claimed limitations renders Applicant's argument completely erroneous and unsubstantiated.

Therefore, Examiner asserts the validity of the prior art references and maintains rejection.

Allowable Subject Matter

8. Claims 1-3 are allowed.

The following is an examiner's statement of reasons for allowance: As the claims were read and interpreted in light of the specification, the prior art of record fails to

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specifically disclose a laser diode module having the all the limitations of those recited in claim 1, and in particular, an alignment rail positioned in the first casing hole aligned parallel with the second casing hole axis and a ferrule having an alignment groove fitting the alignment rail to align the slant polished first ferrule with the lens.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Y. Wang whose telephone number is 703-305-7242. The examiner can normally be reached on M-F, 8 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 703-305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

gw
June 26, 2003


ROBERT H. KIM
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